

REMARKS

Summary of the Office Action and Formalities

Status of Claims

Claims 1-15 are all the claims pending in the application. By this Amendment, Applicants are amending claims 1-15 for reasons of form and adding new claims 16-25. No new matter is added.

Extension of Time & Excess Claim Fee

Submitted herewith is a petition for an extension of time with a two-month extension fee. An Excess Claim Fee is also being paid concurrently herewith.

Foreign Priority

Applicants thank the Examiner for acknowledging the claim to foreign priority and indicating that the certified copy of the priority document has been received.

Information Disclosure Statement

Applicants thank the Examiner for considering all of the references listed on the Information Disclosure Statement filed on September 18, 2006.

Drawings

The Examiner objects to the drawings for the reasons stated on page 2 of the Office Action. Applicants are submitting amended Figures 1 and 2 to address the Examiner's objection. Additionally, Applicants are submitting amended Figures 3-8 as noted above.

Specification

The Examiner objects to the specification because the term “amagnetic” appears throughout the specification. Applicants are amending the specification to address the Examiner’s Objection.

Claim Objections

The Examiner objects to claim 8 because “[t]he centering means being fins should be dependent upon claim 7 and not 6 as the fins are disposed on the shutter and not on the lateral wall.” (Office Action at page 3.) Applicants respectfully disagree. The specification indicates “[t]wo centering members 324 in the form of non-magnetic material lugs or fins for stabilizing the shutter 20 are placed on the stem 122 of the shutter 20 or alternatively on the inside wall of the chamber 12” (Current application, page 8, lines 28-32.) As such, Applicants respectfully request that the Examiner withdraw the objection to claim 8.

Art Rejections

1. *Claims 1-7, and 9-15 are rejected under 35 U.S.C. 102(b) as allegedly being anticipated by Fuller, Jr. US 3,556,156.*
2. *Claims 1-2, 4, 6-7, and 13 are rejected under 35 U.S.C. 102(b) as allegedly being anticipated by Anderson et al. US 6,276,663.*
3. *Claims 3, 5, and 9-13 are rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Anderson et al. US 6,276,663 in view of Fuller, Jr. US 3,556,156.*
4. *Claim 8 is rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Fuller, Jr. US 3,556,156 in view of Erickson et al. US 5,606,992.*
5. *Claim 8 is rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Anderson et al. US 6,276,663 in view of Erickson et al. US 5,606,992.*
6. *Claim 13 is rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Fuller, Jr. US 3,556,156.*

7. *Claim 15 is rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Fuller, Jr. US 3,556,156 in view of Miller US 2,629,401.*

8. *Claims 14-15 is rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Anderson et al. US 6,276,663 in view of Miller US 2,629,401.*

Applicants respectfully traverse.

Claim Rejections - 35 U.S.C. § 102

1. *Claims 1-7, and 9-15 in view of Fuller, Jr. US 3,556,156.*

In rejecting claims 1-7 and 9-15, the grounds of rejection state:

Anderson discloses a valve (Figs. 1-3) having a shutter (lower 24 in Fig. 1/linkage 44 in Fig. 2/ 46 in Fig. 3) placed in a chamber provided in a valve body 16, an end of said chamber being provided with a seat 18 against which a flap-forming part (24 closest to seat 18 on Figs. 1-2 or 48 in Fig. 3) of the shutter rests in a closed position of the valve and is remote therefrom in an open position of the valve and a magnetic control device including shutter magnetic drive means 30 disposed outside the chamber for moving it either to its closed position or to its open position, wherein said magnetic control device further comprises at least one ball 24 which is made of a magnetic material, disposed in said chamber and which is coupled to said external magnetic drive means, said ball being associated with said shutter in such a way that said shutter is driven in said chamber when said ball is itself moved by said external magnetic drive means. The ball turns freely relative to said shutter. The shutter has at least one housing (44 in Fig. 2, curved portion of 46 in Fig. 3) in which at least one ball is placed. The valve is adapted to center said shutter in said valve body (balls ride along walls thus centering it). The shutter is associated with at least two balls offset longitudinally (Figs. 1-3) or angularly (Fig. 1, for example, left ball at the top relative to right ball 2nd from top) relative to the axis of said shutter. The two separate sections of said shutter associated with at least two balls disposed so the angular offset between two successive balls of a same section is equal to 180 degrees and 2 balls of a section are angularly offset by an angle equal to $360/2 = 180$ degrees. At least one fluid passage groove 28 and 28' is machined in the inside wall of said chamber and a rolling area is formed on either side of said groove (Fig. 3). The drive means 30 being a magnet moving

parallel to the longitudinal axis to drive the ball simultaneously (by moving rod 40, col. 2, lines 48-75).

(Office Action at pages 4-5.)

Regarding claim 1, Applicants respectfully submit that none of the embodiments of Fuller disclose at least “ a plug-forming part provided in said shutter, the plug-forming part configured to rest against the seat to close the outlet in a closed position of the valve and configured to be remote from the seat in an open position of the valve.”

Fuller does not disclose a shut-off valve, a poppet seat valve, or a plug valve. Rather Fuller discloses a magnetically actuated fluid flow constricting valve. (See Fuller, Abstract.) Fuller only discloses constriction means adapted for being interposed in the fluid flow so as to regulate the flow rate thereof. (See Fuller, col. 1, lines 24-26.) Consequently, none of the valves disclosed in Fuller (see FIGS. 1, 2 & 3) include a plug-forming part.

Referring to Figure 1 of Fuller, this valve does not disclose a plug resting on a seat. Figure 1 only shows a plurality of spherical elements 24 that are made of magnetically permeable material. (Fuller, col. 2, line 29-30.) The spherical elements 24 are incapable of closing the aperture 20, which is a linear slot. (See Fuller, col. 2, line 37.) Rather, the spherical elements only constrict the flow of the fluid through the conduit 10. As such, none of the elements 24 are a shutter and Figure 1 of Fuller does not disclose all of the features of claim 1.

Referring to Figure 2 of Fuller, the Examiner alleges that linkage 44 is a shutter. Applicants submit, however, that the linkage 44 is not a shutter because the linkage 44 does not close the aperture 18 and does not rest on the aperture 18 in a closed position. Furthermore, none of the spherical elements can be considered a shutter because none of the spherical elements are

capable of closing the aperture 18. Again, the spherical elements only constrict the flow of the fluid through the conduit 10 and do not close either aperture 18, 20. (See col. 3, line 33.) As such, Figure 2 of Fuller does not disclose all of the features of claim 1.

Referring to Figure 3 of Fuller, the Examiner alleges that the orifice block 46 is a shutter. Again, Applicants submit that the orifice block 46 does not close the aperture 18 and is not remote from the aperture 18 when the orifice block 46 is in an open position. Rather, the orifice block 46 has passageways 48 and 50 that constrict the flow of fluid, but do not close the aperture 18. As such, Applicants submit that Figure 3 of Fuller does not disclose the shutter as recited in independent claim 1.

In view of the above, Applicants respectfully submit that none of the valves shown in FIGS. 1-3 of Fuller disclose the device as recited in independent claim 1.

Regarding claims 2-7 and 9-15, Applicants submit that these claims are allowable at least by virtue of their dependency on independent claim 1.

2. *Claims 1-2, 4, 6-7, and 13 in view of Anderson.*

In rejecting claims 1-2, 4, 6-7, and 13 in view of Anderson et al. (US 6,276,663) the grounds of rejection state:

Anderson discloses a valve 10/54 having a shutter 20/64 placed in a chamber provided in a valve body 12/56, an end of said chamber being provided with a seat 14f/58f against which a flap-forming part 20a/64a of the shutter rests in a closed position of the valve and is remote therefrom in an open position of the valve and a magnetic control device including shutter magnetic drive means 25/69 disposed outside the chamber for moving it either to its closed position or to its open position, wherein said magnetic control device further comprises at least one ball 42/86 which is

made of a magnetic material, disposed in said chamber and which is coupled to said external magnetic drive means, said ball being associated with said shutter in such a way that said shutter is driven in said chamber when said ball is itself moved by said external magnetic drive means. The ball turns freely relative to said shuttle. The valve is adapted to center said shuttle in said valve body (36b with outer wall of 20)/(80e or 62a with outer wall of 64b) wherein centering means are disposed inside said chamber or on said shutter so as to cooperate with said shutter or internal lateral wall of said chamber. At least one fluid passage groove (seen in 84) is machined in the inside wall of said chamber and a rolling area is formed on either side of said groove (Fig. 4).

(Office Action at page 6.)

Regarding claim 1, Anderson does not disclose at least, “wherein said magnetically driven member engages said shutter such that said shutter is driven to the open position or to the closed position by the magnetically driven member when said magnetically driven member is moved by said external magnetic driving means;”

Anderson discloses that the solenoid 10 is closed when an electrical current is applied to the solenoid 10 creating a magnetic force in the ring 36. (Anderson, col. 4, line 4-14.) When the magnetic force in the ring 36 is greater than the hydraulic pressure applied against the pin 20, the ring 36 attracts the ball 42 until the pin 20 rests against the snout seat 14f. (Anderson, col. 4, lines 17-20.) To open the solenoid 10, the electrical current is reduced to decrease the magnetic force in the ring 36 to less than the force of the hydraulic pressure force acting on the pin 20. (Anderson, col. 4, lines 44-48.) Thus, in Anderson, when the electrical current is reduced such that the magnetic force is less than the hydraulic force, the ball moves but does not drive the pin 20. Only the hydraulic pressure acts to remove the pin 20 from the snout seat 14f. As such,

Anderson does not disclose a shutter that is driven to an open position by a magnetically driven member when said magnetically driven member is moved.

Regarding claims 2, 4, 6-7 and 13, Applicants submit that these claims are allowable at least by virtue of their dependency from independent claim 1.

Claim Rejections - 35 U.S.C. § 103

3. *Claims 3, 5, and 9-13 over Anderson in view of Fuller.*

Applicants respectfully submit that claims 3, 5, and 9-13 are allowable at least by virtue of their dependency from independent claim 1.

4. *Claim 8 over Fuller in view of Erickson.*

Applicants respectfully submit that claim 8 is allowable at least by virtue of its dependency from independent claim 1.

5. *Claim 8 over Anderson in view of Erickson.*

Applicants respectfully submit that claim 8 is allowable at least by virtue of its dependency from independent claim 1.

6. *Claim 13 over Fuller.*

Applicants respectfully submit that claim 13 is allowable at least by virtue of its dependency from independent claim 1.

7. *Claim 15 over Fuller in view of Miller.*

Applicants respectfully submit that claim 15 is allowable at least by virtue of its dependency from independent claim 1.

8. *Claims 14-15 over Anderson in view of Miller.*

Applicants respectfully submit that claims 14 and 15 are allowable at least by virtue of their dependency from independent claim 1.

New Claims

For additional claim coverage merited by the scope of the invention, Applicants are adding new claims 16-26.

Regarding claims 16-21, Applicants submit that these claims are allowable at least by virtue of their dependencies from independent claim 1. Applicants also submit that the prior art does not disclose the recited features of claims 16-21.

Regarding independent claim 22, Applicants submit that none of the cited references disclose at least “[a] ball made of magnetic material disposed in a housing in the shutter, wherein the housing is configured to allow the at least one ball to roll along an inside surface of the tubular body and freely rotate within the housing, thereby preventing the shutter from contacting a side wall of the tubular body” or “wherein the at least one ball pulls the shutter to the open position and wherein the at least one ball pushes the shutter to the closed position.”

Regarding claims 23-26, Applicants submit that these claims are allowable at least by virtue of their dependencies from independent claim 22. Applicants also submit that the prior art does not disclose the recited features of claims 23-26.

Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the

Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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